

# Radiology Compliance Branch

## RADIATION PROTECTION SECTION



Division of Health Service Regulation • N.C. Department of Health and Human Services

### ANALYTICAL X-RAY RADIATION PROTECTION PROGRAM GUIDE

Each registrant shall develop, document, and implement a Radiation Protection Program commensurate with the scope and extent of registered activities to ensure compliance with the provisions of **10A NCAC 15 [.1600]**. In accordance with Rule **[.1603 (c)]**, the registrant shall annually review the radiation protection program content and implementation.

[NC Radiation Dictionary](#)

[NC Radiation Regulations](#)

### ITEMS TO INCLUDE IN RADIATION PROTECTION PROGRAM AND OPERATING PROCEDURES

#### Radiation Protection Program: [.1603(a)]

**ALARA** (As Low As Reasonably Achievable) [Radiation Protection Principles](#)

- Describe the procedures and engineering controls that are used based upon sound radiation principles to achieve occupational doses and doses to members of the public ALARA. **[.1603(b)]**
  - Identify any additional procedures or controls used that are specific to the facility to achieve ALARA.

#### Personnel

- Describe how individuals are notified if occupational doses exceed 1 mSv (100 mrem) TEDE or 1 mSv (100 mrem) to any individual organ or tissue **[.1004] (effective 1/1/14)**
- State the facilities annual occupational dose limits. **[.1604(a)]** [Dose Limits](#)
- Explain how doses that an individual may receive in the current year are reduced by the occupational exposures received while employed by another person. **[.1604(f)]**
- State the dose limits to an Embryo/Fetus. **[.1610] [.1614(1)(c)]**
- Explain the facilities personnel voluntary declared pregnancy policy. **[.1640(f)]** [Pregnancy Policy](#)
- Describe the facilities personnel monitoring exposure policy. **[.1614]**
  - Frequency of exchanging badges
  - Storage of control and personnel badges
- Explain the facilities retention period for exposure records. (keep all dosimetry reports) **[.1640(a)(1)&(g)]**

#### Open-Beam Radiation Generating Device (RGD)

- Ring or Wrist personnel monitoring equipment **[.0806(b)]**

#### Unit Security [.1622]

- Equipment control measures in place to prevent unauthorized use or device removal from facility's registered physical location

#### Exceeding Exposure Limits [.1647)] [Dose Limits](#)

- Identify the facilities reporting process for when a dose limit is exceeded? **[.1646][.1647]**
- Describe how the data of the affected person is to be reported to both the individual and to Radiation Protection. **[.1647(b)(c)(d)(e)] [.0111]**
  - Estimated dose
  - Cause of elevated exposure
  - Corrective Action
  - Name & Date of Birth
  - The last 4 of the Social security number and/or employee identifier



**Operating Requirements [.0805][.0806]**

- Written operating procedures shall be written and available for operators and support staff.
- Operators must receive instruction in the operating and emergency procedures
- The process to bypass a safety device must be included in the radiation protection program. THE WRITTEN APPROVAL (from the RSO) MUST INCLUDE AN EXPIRATION DATE.

**Instructions to Worker [.1003]**

All individuals who during employment are likely to receive in a year an occupational dose in excess of 100 millirem (mR) shall be:

- **Informed** about storage, transfer, or use of radiation in the restricted areas
- **Instructed** in health protection problems associated with exposure to radiation.
- **Instructed** in precautions or procedures to minimize exposure.
- **Instructed** in purposes and functions of all protective devices employed. (Lead drapes, safety interlocks etc.)
- **Instructed** to report promptly to the registrant any condition which may lead to or cause a violation of rules in this Chapter (Regulations).
- **Instructed** in the appropriate response to warnings made in the event of any unusual occurrence or malfunction that may involve exposure to radiation.

**REVIEW OF RADIATION PROTECTION PROGRAM**

In accordance with Rule .1603 (c), the registrant shall annually review the radiation protection program's content and implementation. These procedures are available to each individual who operates the x-ray equipment.

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**(Signature of Radiation Safety Officer)**

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**Date**

<b>The NC Radiation link</b> <a href="http://www.ncradiation.net/Xray/reference.htm">http://www.ncradiation.net/Xray/reference.htm</a> has the following information:	
<a href="#">Inspection Check List</a>	Information the inspectors ask to see during an inspection
<a href="#">Tips For Answering Violations</a>	How to reply to violations
<a href="#">Reference Guides For Facilities</a>	Information to help the facilities write their own safety program
<a href="#">Plan Reviews &amp; Surveys</a>	Registered service providers qualified to provide this service
<a href="#">Registration Requirements</a>	Requirements for new and existing facilities
<a href="#">Steps To Install X-Ray Equipment or Register</a>	Guide for installing equipment
<a href="#">Registration Forms</a>	Form to register a facility / X-ray machines or amend a registration
<a href="#">Registration: Owning or Possessing X-Ray Equipment</a>	Guide for Owning or Possessing X-Ray Equipment in NC
<a href="#">Postings</a>	Documents that need to be posted in the facility

